

## CLAIMS

1. A wireless communication apparatus comprising:  
an estimator that estimates a propagation environment of a signal; and  
5 a selector that selects a receiving scheme for the signal from two or more receiving schemes including at least linear equalization.
2. The wireless communication apparatus according to  
10 claim 1, wherein the estimator comprises:  
a known signal obtainer that obtains a known signal contained in the signal;  
a reception quality measurer that measures a reception quality of the known signal obtained;  
15 a moving speed detector that detects a moving speed of the wireless communication apparatus; and  
an interference power measurer that measures a power of interference waves that arrive from other cells than a cell where said wireless communication apparatus  
20 belongs.
3. The wireless communication apparatus according to claim 1, wherein the selector selects linear equalization for the receiving scheme when a moving speed of the wireless  
25 communication apparatus is below a predetermined speed level and an impact of an interference wave is below a predetermined level.

4. The wireless communication apparatus according to claim 1, wherein the selector selects linear equalization for the receiving scheme at a communicating station when  
5 a moving speed of said communicating station is below a predetermined speed level.

5. The wireless communication apparatus according to claim 3,  
10 wherein the estimator comprises a minimum period obtainer that obtains a minimum period for updating a coefficient for linear equalization processing; and  
wherein the selector determines the predetermined speed level based on the minimum period obtained.

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6. The wireless communication apparatus according to claim 4,  
wherein the estimator comprises a minimum period obtainer that obtains a minimum period for updating a  
20 coefficient for linear equalization processing; and  
wherein the selector determines the predetermined speed level based on the minimum period obtained.

7. The wireless communication apparatus according to claim 1, further comprising a determiner that determines  
25 a channel quality indicator for a transmission rate selection in accordance with a reception quality of a

signal,

wherein, when linear equalization is selected by the selector for the receiving scheme, the determiner determines the channel quality indicator based on a  
5 premise of performing linear equalization.

8. The wireless communication apparatus according to claim 1, further comprising:

a reporter that reports the receiving scheme  
10 selected by the selector to a communicating station; and

a transmitter that transmits a signal at a transmission rate based on the selected receiving scheme and a channel quality indicator,

wherein, when the selected receiving scheme is  
15 linear equalization, the transmitter transmits a signal at a transmission rate based on a premise that the communicating apparatus performs linear equalization.

9. The wireless communication apparatus according to  
20 claim 1,

wherein the estimator comprises a known signal obtainer that obtains a known signal contained in the signal and a reception quality measurer that measures a reception quality of the known signal obtained; and

25 wherein the selector selects linear equalization for the receiving scheme when the reception quality obtained is greater than a predetermined level.

10. The wireless communication apparatus according to claim 1, further comprising an obtainer that obtains control information relating to a modulation scheme of  
5 the signal,

wherein the selector selects the receiving scheme for the signal in accordance with the propagation environment as estimated by the estimator and the modulation scheme.

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11. The wireless communication apparatus according to claim 1, further comprising an obtainer that obtains control information relating to the number of multiplex codes with which the signal is multiplexed,

15 wherein the selector selects the receiving scheme for the signal in accordance with the propagation environment as estimated by the estimator and the number of multiplex codes.

20 12. A receiving apparatus comprising:

an obtainer that obtains information relating to a receiving scheme selected from two or more receiving schemes that include at least linear equalization in accordance with a propagation environment; and

25 a receiver that receives a signal received by the receiving scheme specified by the receiving scheme information obtained.

13. A mobile station apparatus comprising the wireless communication apparatus of claim 1.

5 14. A base station apparatus comprising the wireless communication apparatus of claim 1.

15. A mobile station apparatus comprising the receiving apparatus of claim 12.

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16. A base station apparatus comprising the receiving apparatus of claim 12.

17. A receiving scheme selection method comprising the steps of:

estimating a propagation environment of a signal;  
and

selecting a receiving scheme for the signal from two or more receiving schemes that include at least linear  
20 equalization in accordance with the propagation environment estimated.